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EXAMINER

PIAZZA CORCORAN, GLADYS JOSEFINA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/761,301	SCHMIDT, RONALD P.	
	Examiner	Art Unit	
	Gladys J Piazza Corcoran	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on February 20, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13,15,16,18-20,22,24,26-29,43 and 46-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13,15,16,18-20,22,24,26-29,43 and 46-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following Action is in response to the Amendment filed on February 20, 2004. The previous Office Action filed on February 19, 2004 may be disregarded.

Drawings

1. The proposed corrected drawing sheets 1, 3-7 received on January 2, 2004 are approved. A proper drawing correction or corrected drawings are required in reply to the Office Action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.
2. The proposed corrected drawing sheet 2 received on January 2, 2004 is not approved. The proposed correction to Figure 4 of the line for reference number 19 is pointing to the base 13 and not the base side of the pressure intensifier as described in the Specification.
3. It is additionally further noted that the dark lines underneath the bases in figure 1C filed May 1, 2001, also have to be removed in order to conform to the originally filed drawings and to overcome new matter rejections. Also, Figure 4 filed May 1, 2001 shows reference numbers 10 and 12 pointing to the same part, where the originally filed drawings and the specification disclose the reference number 10 as representing an assembly of parts including 12, 14, and 16 (page 8); and the figure should include reference number 13 as shown in the proposed drawing correction filed June 24, 2003 and previously approved (It is noted that these changes were corrected in the proposed Drawing correction filed January 2, 2003, however this sheet was not approved in regard to reference number 19 as discussed above).

Specification

4. The amendments filed January 26, 2004 and June 24, 2003 are objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The Specification now recites, "A plane 25 that is normal to exterior side 23 equally bisects the corner formed by leg side 21 and base side 19. When positioned adjacent pre-form 14 prior to curing, the plane that is normal to exterior side 23 also equally bisects a corner formed by base 13 or base 19 and one of the legs 15. In the embodiment of Figure 4, base side 19 and leg side 21 are 90° relative to each other and of equal lengths." There is no support in the original specification, including the original drawings that describe or show the "plane 25" normal to the exterior side and bisecting the corner (of the perform or of the pressure intensifier). There is also no support in the original specification, including the original drawings that describe or show that the base side and the leg side are of equal lengths. It is noted that there is no indication that the originally submitted drawings are working drawings.

Applicant is required to cancel the new matter in the reply to this Office Action.

5. The disclosure is objected to because of the following informalities: Line 11 of the newly amended paragraph of the Specification on page 9 recites, "equally bisects a corner formed by base 13 or base 19 and one of the legs 15". This amendment is unclear in that there is no base 19, only a base side 19 and the base side 19 does not form a corner with either of the legs 15.

Appropriate correction is required.

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 13 recites that the leg side of the first pressure intensifier extending past an end of the first leg, that the base side of the first pressure intensifier extending past a first end of the base, that said leg side of said second pressure intensifier extending past an end of said second leg, and that said base side of said first pressure intensifier extending past a second end of said base. Claim 24 recites that the first pressure intensifier has a base side that has a length greater than a length of the first portion of the base and a leg side that has a length greater than a length of the first leg, that the second pressure intensifier has a base side that has a length greater than a length of the second portion of the base and a leg side that has a length greater than a length of the second leg. Claim 46 recites that the inner sides of each of the pressure intensifiers extends past the tapered end sections. While these are considered to be disclosed in the Original Drawing figure 4, such should also be described in the Specification.

Claim 15 recites, "each of said leg sides and each of said base sides of said first and second pressure intensifiers are straight surfaces located in a single plane and spaced from said tapered sections prior to evacuating the vacuum bag." Claim 26 also recites clearances between the pressure intensifiers and the tapered end sections. While this is considered to be disclosed in the original Drawing figure 4, such should also be described in the Specification.

Claim Objections

7. Claims 13, 26, 29 are objected to because of the following informalities:

Claim 13 recites in line 12, "past and end" which should be --past **an** end--.

Claim 24 recites in line 19, "located in a a single plane" which should be --
located in a single plane--.

Claim 26 recites in line 11, "said second leg" which should be --said second leg--.

Claim 29 recites in line 2, "said pre-form" which should be --said pre-form--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 13, 15, 16, 18-20, 22, 46, 47 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 13 recites, "said leg side of said first pressure intensifier extending past and end of said first leg for contact with said second pre-cured assembly, and said base side of said first pressure intensifier extending past a first end of said base for contact with said first pre-cured assembly". Claim 13 also recites, "said leg side of said second pressure intensifier extending past an end of said second leg for contact with said

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second pre-cured assembly, and said base side of said first pressure intensifier extending past a second end of said base for contact with said first pre-cured assembly". Claim 46 recites, "the inner sides of each of the pressure intensifiers extending past the tapered end sections for contact with the first and second structures. While there is support in the original drawings figure 4 for the pressure intensifiers extending past the textile perform, there is no disclosure in the original specification as a whole that suggests that the pressure intensifiers contact the first or second pre-cured assemblies.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 13, 15, 16, 18-20, 22, 24, 26-29, 43, 47, 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Claim 13 recites the limitation "the legs" in line 5. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amended to --the first and second legs--.

13. Claim 13 in line 19 is unclear by reciting "said base side of said first pressure intensifier extending past a second end of said base", when the previous line describe the first pressure intensifier extending past the first end of the base. It is suggested to amend to --said second pressure intensifier--.

14. Claim 15 is unclear by reciting in line 3, "and second first and second ends". It is suggested to amend to --and **said** first and second ends--.

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15. Claim 24 recites the limitation "said first and second legs" in line 5 and throughout the claim. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amended line 3 of claim 24 from "a pair of legs" to --first and second legs--.

16. Claim 24 recites the limitation "said 3-D woven textile pre-form" in lines 11 and 28. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amended to -- said woven textile pre-form --.

17. Claim 48 recites the limitation "said exterior side" in line 1. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amended to -- where in each of said pressure intensifiers has an exterior side that is concave.--.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 13, 16, 18, 22, 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breuer et al. (DE 19832441 C1 with English equivalent US Patent No. 6,306,239) in view of Abildskov (US Patent No. 4,782,864) and Hertzberg (US Patent No. 4,96,802) as further taken with Sloman (WO 98/50214) and Tsuchiya et al. (US Patent No. 5,135,382).

Breuer discloses a method of forming a structural assembly by affixing a first pre-cured assembly (skin member 6) to a 3-D textile pre-form (stiffening profile members 7)

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impregnated with an uncured resin (column 4, lines 52-60; column 6, lines 9-26), affixing a second pre-cured assembly (stringer core blanks 5) (between the legs) to said 3-D textile pre-form (stiffening profile members 7) (column 5, lines 23-40) and curing the resin to form the structural assembly (column 7, lines 30-55).

As to the limitation that the 3-D perform is woven, Breuer does disclose that pre-form is a fiber reinforced composite material of fiber textile materials (column 6, lines 18-26), however Breuer does not specifically disclose that the pre-form is woven. Abildskov discloses that an improvement of prior art methods with a pair of fabric connectors is to provide one three dimensional woven fabric connector in order to avoid peel problems of the prior art methods (figures 1, 3; column 2, lines 35-68). As to the limitations that the perform has a base and two legs extending from the base with the first pre-cured assembly on a side of the perform opposite the legs, the 3-D woven textile pre-form in Abildskov has an additional leg extending from the base and the pre-form is Pi-shaped (see figure 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the method of forming a structural assembly as shown by Breuer by providing a 3-D woven textile pre-form in a Pi shape in order to overcome peel problems associated with using two fabric pieces (stringer core blanks 5) as shown by Abildskov.

As to the limitations of an adhesive film being located between the first pre-cured assembly and the pre-form, an additional adhesive film being located between the second pre-cured assembly and the pre-form, and curing the adhesive films to form the structural assembly, Breuer only discloses curing the resin in the 3-D pre-form to

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provide the bonding between the pre-form and the two pre-cured assemblies.

Hertzberg discloses it is known in the art to provide an adhesive film between parts of structural assemblies in order to prevent delamination and provide a stronger bond than the prior art methods of only utilizing the resin in the parts for bonding when cured (column 1, lines 19-16; column 3, lines 25-31). Hertzberg further discloses that the adhesive film layers are placed between the joined surfaces of the parts of the structural assembly and then the structural assembly is cured (column 2, lines 55-68; column 4, line 47 to column 5, line 8; column 9, line 41). It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the method of forming a structural assembly as shown by Breuer and Abildskov by providing adhesive film layers between the interfaces of 3-D pre-form and the pre-cured assemblies in order to reduce delamination and provide a stronger bond as shown by Hertzberg.

As to the limitations of providing first and second pressure intensifiers of flexible material against exterior surfaces of the legs and base for pressing the base and legs of the pre-forms against portions of the pre-cured assemblies with the evacuation of the vacuum bag, it is well known in the art to provide such pressure intensifiers for properly applying pressure against corners of composite materials during curing. For example, Sloman discloses that it is known in the production of composite components to use a pressure transmitter to allow pressure to be applied to the composite components during their molding in a tool and for molding techniques that involve the use of a vacuum bag applied to the molding (pages 1, 3). In particular, pressure transmitters are used for the female features on the non-molded side of the component (page 1). A

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flexible (elastomeric) pressure intensifier for a corner concave region is arranged on the composite corner with a base side on the base and a leg side on the leg and an exterior side that extends from an edge of the base side to the edge of the leg side (page 6; figure 2). The vacuum bag (19) is placed over the composite and the pressure intensifier to press the sides of the composite. As to the newly added limitation that the pressure intensifiers extend past the ends of the pre-form, such is also considered known in the art in order to provide proper pressure over the entire structure as shown by Tsuchiya (see figure 1). Whether or not the intensifiers contact the structural assemblies would have been well within the purview of one of ordinary skill in the art and dependent only upon the flexibility of the pressure intensifiers, the amount of pressure applied and the thickness of the pre-form. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming a structural assembly as shown by Breuer, Abildskov, and Hertzberg, with pressure intensifiers on each of the two corner portions of the pre-form (thus using two pressure intensifiers) that extend past the pre-form in order to provide proper pressure and molding to the corner structure of the composite during vacuum molding as is well known and exemplified by Sloman and Tsuchiya.

As to the limitations of inserting the parts into the vacuum bag, Breuer discloses the step of curing is implemented by inserting the pre-cured assemblies and the pre-form into a vacuum bag and evacuating and heating the vacuum bag (column 7, lines 30-60). Clearly the adhesive films between the parts and the pressure intensifiers would also be inserted in the vacuum bag.

As to claim 16, Breuer discloses curing the structural assembly with heat and pressure (column 7, lines 30-55). As to claim 18, the exterior side of the pressure intensifier in Sloman is concave (figure 2). As to claim 22, the material in Sloman for the pressure intensifier is an elastomeric material (rubber) (page 4). As to claim 47, the pressure intensifier shown in Sloman has a base side and a leg side at a right angle to each other and is triangular in cross section (see figures).

20. Claims 15, 24, 26, 27, 43, 46, 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breuer et al. in view of Abildskov, Hertzberg, Sloman, and Tsuchiya as applied to claim 13 above, and further in view of Mueller et al. (US Patent No. 6,173,925), Morris et al. (US Patent No. 5,944,286), and/or Duffy (WO 99/59802).

As to claim 24, the legs in Abildskov are at a 90 degree angle (see figure 3), the pressure intensifiers in Sloman are triangular in cross section (see figure 2), and the adhesive film layers would be between all the surfaces of the pre-form and the pre-cured assemblies and therefore would be between the base of the pre-form and the pre-cured assembly and between the leg of the perform and the pre-cured assembly.

As to the newly added limitation in claims 15, 24, and 46 that the base and legs have end sections that are tapered, it is known to provide tapered edges on a pre-form for structural assemblies in order to provide a more aesthetic transition, to provide a greater surface area for bonding, and for better transmission of loads on the structural assembly. For example, Mueller discloses an example of a pre-form (27) in a structural assembly with tapered edges (figure 1; column 3, line 64 to column 4, line 23; column 4, lines 53-60). Morris discloses another example of a pre-form (6, 7) in a structural

assembly having tapered edges (see figure 1). Finally, Duffy discloses another pre-form in a structural assembly with tapered edges (figures 4 and 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a method of forming a structural assembly as shown by Breuer, Abildskov, Hertzberg, and Sloman by providing the pre-form with a tapered edge as is well known in the art and exemplified by Mueller, Morris and/or Duffy in order to provide a structural assembly with a more aesthetic transition, greater surface area for bonding, and better transmission of loads on the assembly. It is noted that Applicant has not asserted any criticality to the tapered edges.

As to the added limitation in claim 15 and in claim 26, the straight sides of the pressure intensifiers in Sloman would be spaced from the tapered sections prior to evacuation. As to claim 27, Breuer discloses the curing is implemented by heating the vacuum bag (column 7, lines 30-55). As to claim 43, the material in Sloman for the pressure intensifier is an elastomeric material (rubber) (page 4). As to claim 46, the pressure intensifier in Sloman is a three sided polygon in cross section with two straight inner sides intersecting each other defining a corner portion and an exterior side that extends between edges of the inner sides (see figure 2). As to claim 48, the exterior side of the pressure intensifier in Sloman is concave.

21. Claims 19, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breuer et al. in view of Abildskov, Hertzberg, Sloman and Tsuchiya (optionally in view of Mueller et al., Morris et al., and/or Duffy) as applied to claims 13 and 24 above, and further in view of Leaversuch (Electron-Beam Treatment Upgrades a Range of High-

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Volume Materials) and/or Bersuch et al. (Affordable Composite Structure for Next Generation Fighters).

Breuer discloses curing the structural assembly with heat and pressure (column 7, lines 30-55). Leaversuch discloses E-beam treatment for curing polymers (for example epoxy) reduces speed cycles, tooling, manufacture and energy costs, and provides increased dimensional stability in a variety of areas including advanced composites for aerospace and transportation parts. Bersuch also discloses E-beam treatment curing as a known method for curing structural assemblies (pages 1, 2, 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the method of forming structural assemblies as shown by Breuer, Abildskov, Hertzberg and Sloman by curing the resin in the structural assemblies through and E-beam treatment as shown by Leaversuch to reduce costs and increase dimensional stability in advanced composites for aerospace and transportation parts particularly since it is well known that the resin used in structural assemblies such as the ones in Breuer, Abildskov and Hertzberg is epoxy (see for example Hertzberg, column 1, line 68) and/or as shown by Bersuch as an alternative to heat curing in structural assemblies.

22. Claims 20, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breuer et al. in view of Abildskov, Hertzberg, Sloman, and Tsuchiya (optionally in view of Mueller et al., Morris et al., and/or Duffy) as applied to claims 13, 24 above, and further in view of Bersuch et al. (Affordable Composite Structure for Next Generation Fighters) and/or Sheahen et al. (Robust Composite Sandwich Structures).

It is well known to apply additional composite overwrap plies on pre-forms for structural assemblies for a stronger joint bond. For example, Bersuch (page 9) and/or Sheahen (pages 6-7) both disclose applying composite overwrap plies on an exterior surface of a woven pre-form. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming a structural assembly as shown by Breuer, Abildskov, Hertzberg, and Sloman by providing an overwrap ply over an exterior surface of the woven pre-form as shown by Bersuch and/or Sheahen in order to provide a stronger and more secure joint. One of ordinary skill in the art would understand providing the overwrap plies prior to cure (thus, prior to pressing the leg sides of the pressure intensifiers against the legs) in order to properly form the composite in the well known manner, only the expected results would be attained.

Response to Arguments

23. Applicant's arguments filed November 10, 2003 (a copy of which was filed on January 26, 2004) have been fully considered but they are not persuasive.

Applicant argues on pages 13-20 that the references individually do not teach the claim limitations. However, as discussed in the previous office action, Breuer discloses forming a structural assembly with pre-cured parts (5 and 6) and an uncured pre-preg pre-form (7) where one of the pre-cured parts (5) is between "legs" of the preform (7), Abildskov discloses that it is advantageous to form structural assemblies with woven pie shapes as an improvement over two L-shaped pre-pregs, Hertzberg discloses it is known to provide adhesive layers between structural parts when curing in order to provide higher shear strength, and finally Sloman and/or Barnes show it is known to

provide pressure intensifiers in order to provide proper pressure in corner areas of structural parts. Therefore all the claim limitations are met by the references as discussed in the prior Office Action.

It is noted that Applicant argues on pages 17-18 that the reference Sloman does not disclose a flexible or compliant pressure intensifier and that the pressure intensifier in Sloman is fairly rigid. The claim recites a first and second pressure intensifier of flexible material. Sloman does disclose a pressure intensifier of flexible material (elastomeric material). There is no difference between the claimed pressure intensifier and the pressure intensifier disclosed in Sloman. It is unclear how Applicant comes to the conclusion that the pressure intensifier in Sloman is fairly rigid and it is further unclear how one of ordinary skill in the art would be able to ascertain any difference between the relative flexibilities of the claimed invention and the pressure intensifier disclosed in Sloman.

Applicant argues on page 21 that Mueller shows adhesive strips that form a tapered structure but not woven pre-forms that taper in thickness and that Morris does not show a tapered pre-form. It is also noted that the claims do not exclude forming a tapered edge by layering as shown in Mueller. The claims merely require that the pre-form have tapered edges. As discussed above, it is known to provide tapered edges on a pre-form for structural assemblies in order to provide a more aesthetic transition, to provide a greater surface area for bonding, and for better transmission of loads on the structural assembly. Mueller discloses an example of a pre-form (27) in a structural assembly with tapered edges (figure 1; column 3, line 64 to column 4, line 23; column 4,

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lines 53-60). Morris also discloses an example of a pre-form (6, 7) in a structural assembly having tapered edges (see figure 1). And finally Duffy also shows such tapering. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a pre-form with a tapered edge as is well known in the art and exemplified by Mueller, Morris, and/or Duffy in order to provide a structural assembly with a more aesthetic transition, greater surface area for bonding, and better transmission of loads on the assembly. Again, it is noted that Applicant has not asserted any criticality to the tapered edges.

24. Applicant's arguments filed January 2, 2004 have been fully considered but they are not persuasive.

Applicant argues on page 9 that all the claims require that the pressure intensifier 18 (Figure 4) extend past the ends of the base section 13 and legs 15 of the pre-form. As shown by the newly cited reference Tsuchiya, such would have been well within the purview of one of ordinary skill in the art in order to provide proper pressure across the structure.

Applicant argues on page 10 that the limitation of tapered end sections in claims 15 and 24 are not shown by the references. See the discussion of Mueller, Morris and Duffy above, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide tapered ends to the pre-forms as shown by the references in order to provide a structural assembly with a more aesthetic transition, greater surface area for bonding, and better transmission of loads on the assembly as exemplified by Mueller and Morris, only the expected results would be attained.

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Applicant further argues on page 10 that the limitations in claims 15 and 24 further include the pressure intensifiers having straight sides in a single plane that are spaced from the tapered sections initially. As discussed above, such would have been apparent to one of ordinary skill in the art when applying straight edges of the pressure intensifiers in Sloman to a pre-form that has tapered ends. Only the expected results would be attained.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is (571) 272-1214. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Gladys J. Corcoran
Examiner
Art Unit 1733

GJPC